LOUISIANA conservationist

JANUARY/FEBRUARY 1975

...comments

The only thing besides people that I claim to know is land. The greatest domestic problem facing our country is saving our soil and water. Our soil belongs also to unborn generations.
—Sam Rayburn

J. Burton Angelle, Director

In looking ahead to a new year with its many challenges, problems and opportunities, it is often wise before charting a course of action to glance back at the year that has passed and evaluate what has been accomplished and those programs that began but are yet to be completed. This glimpse in retrospect should serve to familiarize readers with what has been accomplished and visualize, as do we, what remains to be fostered and pursued in the months ahead.

In looking back over the year that is now history, I would like to cite the commission's accomplishments in the Legislature. At no other time has the commission presented such a varied and important package of bills. All were not passed but many substantial changes in the fish and game laws were made by the Louisiana Legislature, with some of the statutes recommended by the commission streamlining and enhancing the management of Louisiana's fish and wildlife resources.

Capsule descriptions of the important new Acts were contained in the November-December issue of the *Louisiana Conservationist*. In brief, they pertained to fishing, wildlife, boating and seafood laws. Persons wanting more specific information about those Acts can write to the commission.

One of the key Acts raised the hunting license fees, providing additional income that will serve a number of worthy purposes. The increased revenue will allow the commission to operate on self-generated funds, as it has for years. This will offset the rapid decline in oil and gas royalties on commission-owned refuges that have substantially supported the self-funding operations of the commission in years past.

At the same time, while placing Louisiana on a near-parity with all of the other states as far as hunting license fees are concerned, additional revenue will enable the commission to acquire additional lands for wildlife management areas. These will be obtained when suitable lands, priced reasonably, are located. At the present time, the commission is exploring the possibilities of several additional tracts. Like the others already owned or under management by the commission, they will be open to the public free of charge for hunting, fishing, birdwatching, boating, nature study, camping and related outdoor recreation.

Additional revenue will also accelerate the upland game program that was initiated last year. Primary purpose of this program is to assist landowners in restoring habitat which is vital to quail production. At this point, I would like to stress that planned programs to bring back quail populations also result in accompanying increases in populations of other upland game birds such as doves, and greatly bolstered populations of rabbits and squirrels. Such habitat is also used by wild turkeys and deer.

Another accomplishment of the past year was stricter enforcement of fish and game laws. The record speaks for itself there. In 1973, Wildlife Agents made 10,599 cases for fish and game law violations. This was an increase of 1,795 cases over the previous year and set a new record for the Enforcement Division. The final tabulation is not in yet but it is certain that 1974 will show an even greater number of cases.

It is with great appreciation that I am able to report the finest cooperation from the Courts ever rendered in making certain that stiff fines and jail sentences for game law violations were meted out. The convictions and the sentences during 1974 have put teeth in wildlife laws and serve as a deterrent to violations. Because proper and impartial enforcement is the cornerstone of conservation, this full cooperation of the Courts is vital to all of the commission's wildlife management programs.

These are satisfying accomplishments to look back upon, but the commission is looking back only momentarily to last year. Our eyes are on the future—with particular reference to new projects and programs that will be established this year.

It would be remiss not to mention the full cooperation of the Louisiana Wildlife Federation, and also the excellent support that the commission has received from countless thousands of sportsmen in all parts of the state. We have needed their help in the past and it is highly probable that we will be asking for it in those months that are immediately ahead. We hope that it will be forthcoming as readily in the future as it has in the past.

I would like to close these remarks with the expressed hope that the commission will have full public support in the months ahead. Much of the progress that we look back upon has come from that teamwork and mutual understanding. We hope that it will be evident as we move along into 1975.

LOUISIANA
conservationist

Published bi-monthly by the Louisiana Wild Life and Fisheries Commission in the interest of conservation of Louisiana's natural resources.

EDWIN W. EDWARDS, Governor

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*I give my pledge as an American to
save and faithfully to defend
from waste the natural
resources of my country—its soil
and minerals, its forest, waters
and wildlife.*

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**Louisiana Conservationist Magazine
Volume 27, Numbers 1 & 2
400 Royal Street • New Orleans, Louisiana 70130**
Subscription Free to Louisiana Residents Upon Written Request.
Allow Minimum of Three Months for Receipt of First Magazine.

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"GENTLEMAN BOB" DOWN ON THE FARM

Joe L. Herring

Bob Dennie

by LOUIS BRUNETT
GAME BIOLOGIST

Although the bobwhite quail, prince of Louisiana game birds, has been steadily decreasing in numbers in recent years—due to statewide changes in land use and farming methods—it is still our most easily managed game bird and one which, with a little time and effort, can be quickly re-established in huntable populations.

Not that *all* quail have disappeared from the state. Far from it. In fact, Louisiana hunters are still harvesting well over a half million bobwhites annually, and a good stock of quail are permanent residents of the Bayou State. But modern farming techniques—the change to large, one-crop fields, the use of herbicides and pesticides, mechanized clean farming operations which eliminate weeds, thickets, briar patches, and hedgerows, and the switch to cattle raising and improved pastureland—have been greatly detrimental to quail populations.

Fortunately, since quail utilize a relatively small acreage compared to other game birds, they can be effectively managed and maintained in good populations if farmers and other land owners are willing to make the effort. And compared to the effort required, the results can be spectacular: Many hunters who have gone after every type of game in the U. S. consider quail hunting tops, and anyone who has ever edged slowly up to a bird dog on a full point over quail will attest to the excitement and rewards of hunting the bird many outdoorsmen call "Gentleman Bob." Moreover, since many other game birds and animals, including doves, woodcock, bobcats, opossum, raccoon, and even deer and squirrel make some use of the same habitat as quail, farm land "improved" for quail will benefit many other forms of wildlife and greatly increase the likelihood of a full, season-long game bag for the hunter.

Biological research has resulted in the development of excellent, readily applied methods to increase and restore quail populations on Louisiana's pine and farm lands. Quail management consists primarily of manipulating food and cover plants to satisfy bird needs. Therefore, a sound knowledge of quail habits and food and cover preferences is essential. There are also a few popular misconceptions to be dispelled at the outset, namely as regards the effects of hunting pressure and the ravages of wild predators. Legal hunting has very little effect on quail populations from year to year, thus long seasons and liberal bag limits are in order. Even in the absence of hunting, it is estimated that the quail population sustains an annual natural mortality rate of around 80 per cent. If hunters don't harvest a good share of the yearly quail population, nature will. Severe weather conditions and disease account for much of the mortality rate, and domestic dogs and cats, allowed to roam free, probably account for more quail than any wild predator. However, quail replenish themselves in a few years on properly managed ranges, and the best protection against all negative influences is habitat that provides adequate food, nesting, roosting, and escape cover the year around.

ROBERT MURRY

No place for quail here . . .

Optimum covey range for quail provides all of the above, as well as a good water supply, and should be comprised of a variety of vegetation, perennial, and annual, brush and trees. The honeysuckle and blackberry fencerows that used to dot the state around old sharecropper cabins furnished almost ideal cover for quail, but, of course, it is just that sort of cover which is fast disappearing.

However, the Louisiana Wildlife and Fisheries Commission can help any farmer or land owner who wishes to restore or develop prime quail habitat on his land. The Commission is prepared to furnish the technical knowhow to any individual who asks for it. Although the overall project will require forethought, time, and energy on the part of that individual, the results will be well worth the effort. And some of the necessary work can even be accomplished in conjunction with regular farm work. For example, a food plot can be prepared and planted while an adjacent field is planted; a disked strip can be made while going to or from a field; or a strip can be bush-hogged while going to clip the pasture. But it takes a plan. Prior planning is the key to accomplishing the work of the quail management program.

In developing a quail habitat management program the landowner should start with an aerial photograph or a good map of the area to be developed. On this map or aerial photo, the landowner should put all the development he intends to do. This development may be food plots, disked strips, field borders, natural cover, areas to be burned, and firelanes. In developing a long range program, a color code could be used to denote development for each year of the plan. With a wildlife biologist, a map or aerial photo, and some time spent on the ground, a well rounded quail program can be initiated.

Quail need year round food and cover. It is necessary that they have all of these in close proximity to each other as bobwhites live primarily on the ground and travel mostly by walking. The cover needed by quail is nesting cover, loafing and resting cover, and escape cover. In all probability nesting cover is the most difficult to have available, and is most important. Nesting cover and loafing and resting cover differ from escape cover in that they are usually thin stands of grass and weeds. Nesting cover may also be straw or weed stubble, and low growing shrubs may provide loafing and resting cover. Escape cover is usually dense woody plants such as plum thickets.

A field border will provide the necessary cover. This border is the edge of a field or forest opening and is the foundation of game management on any land. These may be a fencerow, hedgerow, turn row, roadside, ditchbank, woodland or any odd area. They usually have different kinds of vegetation than that found in the field or opening.

The edge effect of this border, along fields or openings, is extremely productive for quail and other wildlife. In these borders are located places for feeding, loafing, dusting, sunning, nesting, travel lanes, and living with protective cover. Doves may use the border for nesting, rabbits for cover, woodcock may use the denser part, and where a few trees are left standing, even squirrel and deer may be found.

In developing a border along a fence row, an optimum width of 25 feet or more is desirable. If this fence row is adjacent to crops it should be kept at a maximum height of approximately 7 feet. This keeps "sapping" to a minimum. The width of the border at the edge of woods can be left up to the individual. This border can usually be established by encouraging native woody plants and vines to grow. Some plants that do well and make a good border are wild plum, sumac, greenbriar, wild grape, honeysuckle, blackberry, dogwood, sassafras, and other low growing shrubs. Large trees should not be allowed to dominate the border. In cultivated fields, a strip left fallow will grow into a border; however, it may take three to five years. In developing a border around or through a cow pasture, protection from grazing must be provided. One thing to remember in establishing a border is that a well developed border around a 20 acre grain field will support a covey or two of quail.

ROBERT MURRY

A forest site that could be managed by cattle removal plus disking and controlled burning.

Farm land that is "improved" for quail habitat will benefit many other game animals and also provide for better seasons and fuller game bags.

Lloyd Poissenot

Constructing brush piles and allowing grass and weeds to grow in them is another method of developing cover. The brush piles should be loosely built to be most effective.

Odd areas such as gullies, steep hillsides, field corners, and other areas that are impractical or too small to farm profitably can be developed to provide cover. Sometimes the best thing to do to these is to do nothing. Let native plants come in and grow. These native plants could grow into a thicket.

Wooded areas are valuable to quail because they provide cover and food. They can be improved for quail usage by cutting trees at the woods edge where it joins a field or opening. This will create brushy cover and make the edge more valuable.

A considerable amount of land will have sufficient native plants to supply basic food requirements. Some native plants that are preferred quail foods are partridge pea, goat weed, beggar ticks, ragweed, smartweed, foxtail millet, and various wild legumes. However, it may be necessary to establish food plots if adequate wild foods or waste grains are not plentiful. A row or two of soybeans, grain sorghum, corn, or a strip of brown top millet left standing at the edge of a field will provide ample food for a covey or two. In cultivated crops, the outside rows could be cultivated only once to give the crop a head start on the weeds; then let the weeds grow. This will increase the desirable food and furnish better cover.

Food plots or cultivated crops left standing should be located near cover. Some plants that can be planted in food plots are brown top millet, proso millet, grain sorghum, Korean lespedeza, cowpeas and sunflower. These can be planted separately or in a mixture. Bicolor lespedeza is an excellent perennial plant that produces seed relished by quail. This plant will do good in some areas of Louisiana, but it needs annual maintenance in the form of burning or cultivation, plus fertilization, and it will not stand heavy grazing.

Food plots should be established at the rate of one ⅛ to ¼ acre plot per covey range. This would mean one plot this size for each 15 to 20 acres.

Fertilize the plants of the plot at the rate and manner recommended for that particular plant on that particular soil.

The following is a list of several varieties of good seed which can be planted for quail development.

Name of Seed	Planting Rate Per Acre	When to Plant
Browntop Millet	7 lbs.	Spring & Summer
Milo Maze	5 lbs.	Spring & Summer
Corn	Row crop	Spring & Summer
Peas (many varieties)	25 lbs.	Spring & Summer
Soybeans	25 lbs.	Spring & Summer
Lespedezas (if available)	7-10 lbs.	Early Spring
Several other millets and bird seeds (available at any feed and seed store)	10 lbs.	Spring & Summer
Wheat	35 lbs.	Fall
Vetch and Winter Peas	20 lbs.	Fall
Sunflower	2 lbs.	Spring

Lloyd Poissenot

Left to Right: Wheat, brown top millet and sunflower seeds - all excellent wildlife foods.

Begin plantings as early in spring as weather permits. Plant by broadcasting onto well prepared soil. Fertilize at same time as planting, then cover lightly with disc. Rate and type of fertilization should be based on an analysis of the soil. It is best to plant in long narrow meandering strips or small plots dispersed over the area. A general rule of thumb for planting is one-fourth acre planted per 15-20 acres open land. A mixture of three-fourths browntop millet to one-fourth milo makes a good combination of plant food for quail. Any of the plants listed may be planted in a mixture or they may be planted separately. They may be broadcast or in rows. If broadcast, do not plant too thick. The plants can grow so thick that birds cannot penetrate the stand to use. Sunflower may attract other birds besides quail. This same ratio mixture of wheat and vetch in the fall months is advised. Fall plantings furnishes greens for quail during late winter months and seeds in early spring when left to mature. Leave any areas planted to wheat and vetch undisturbed throughout the first year and possibly the second, since such soil usually produces growths of natural food plants such as goatweeds, beggarweeds, lespedezas, partridge peas, and other perennials and annuals.

PROTHO MILLET

Commission biologists are ready to help any landowner or farmer develop productive upland game habitat.

GRAIN SORGHUM

The native plants mentioned earlier can be grown by simply disking in fallow fields or odd areas. Disking strips every year or two will maintain annual weed growth. Fertilization of the disk strips will be useful on poor soils. Sometimes if disking is not frequent enough, broomsedge may invade the area and be a problem. Disking in this manner will prove to be an inexpensive method of producing good quail food and cover. Disking should start as early as possible in spring, preparing a few strips along until early summer. No disking should be done after August 15, as the plants will not have time to mature before frost.

Near the nesting site an area should be provided that will attract insects. Grasshoppers and other insects are a very important part in the diet of young quail. Lush grassy areas usually attract insects in large numbers, and the adult quail will take her young brood to such areas to feed on them. It is a good idea to stagger planting dates of brown top millet through the spring and summer to furnish sufficient young green vegetation at different stages of growth to attract insects.

Edges of cow pastures produce some quail, but the carrying capacity of such habitat can be greatly increased by doing a minimum amount of work. An inexpensive way to make an exclosure is to fence across an existing fence corner. This results in a triangular shaped food plot or area of cover with little acreage lost to cow pasture and a minimum amount of wire for fencing. Such plots selected and dispersed at proper intervals will furnish good brood raising sites for quail. Cow pastures are sometimes interspersed with stands of pine. Annual burning of these woodlands will result in production of native quail food plants thus increasing carrying capacity.

In the upland piney-woods a combination of control burning and disking are the most inexpensive methods

Bicolor Loom

of providing good quail habitat. A good annual control burning program, along with the previously discussed quail habitat improvement practices, will insure any landowner a complete, well-rounded quail management program. Burning kills back brush, rids the forest floor of pinestraw, and increases growth of annuals such as beggar weeds and partridge peas. Before any burning is attempted the landowner should ask advice of someone who is well acquainted with control burning. Interested landowners may contact the Louisiana Wildlife and Fisheries Commission, and the Louisiana Forestry Commission has a program whereby they perform all aspects of burning for a small cost to the landowner. Burning can be accomplished anytime from December through March. However, on areas hunted, the landowner may want to wait until the hunting season is over to burn.

After the landowner has completed such a burning program and the overhead canopy of pines is open enough to allow plenty of sunlight to reach the forest floor, disked strips in early spring will produce an abundance of quail food plants. These strips could be fertilized and planted with some of the plants recommended for the food plots. Open areas in pine stands could be disked and planted.

Logging operations also are beneficial to quail. When a tree is felled and the branches are removed, the entire trunk or separate logs are dragged to a central point, or banking ground, for loading onto a truck. In this process the surface soil is disturbed just as it is by disking. Another benefit, especially at the loading or banking site, is that the forest canopy is opened allowing sunlight to reach the forest floor. Usually good quail food and cover plants respond to such operations. From year to year, banking grounds can be kept in production by periodic disking, planting and/or burning.

In the Delta region of Louisiana, the same type of development and management techniques apply as used elsewhere in the state. However, burning of hardwood timber should be strictly avoided. Fallow fields that have grown up to weeds and grass can be burned, and this will be of great benefit to quail.

The treatment of land within a sugarcane, soybean, or cotton field can easily be adapted to a good quail management program. Located in such fields, for drainage purposes, are small lateral ditches which eventually lead into larger ones. On the spoil and slopes of these ditches, dewberry briars, a variety of weeds, and other perennials and annuals come in. When left to grow, such sites provide excellent cover and food for quail. If a farmer has quail in mind, then continuous borders of grasses and weeds left along the edges of the drainage ditches and out into the crop itself furnishes excellent places for quail to nest, raise their broods, and find sufficient cove and food to thrive throughout the entire year.

Caution should be taken by the landowner as to the proper selection and application of insecticides and herbicides on his farm. If at all possible, such chemicals should not be used or used in small amounts on areas where quail development work is being concentrated. In some programs for control of sugarcane borer, hydrocarbon insecticides were used, and these caused direct losses among quail and other wildlife. However, when these farmers began using another chemical (Guthion), their report was more favorable toward wildlife populations on their lands.

By following the guidelines outlined in this article, a successful quail restoration program can be developed on almost any farm. Of course, space would not permit the inclusion of many details which the landowner would find of benefit in restoring quail habitat on his property. For further information and technical assistance, contact the district supervisors of the Louisiana Wildlife and Fisheries Commission at any of the following offices: District One Office, P. O. Box 915, Minden, LA 71055; District Two Office, P.O. Box 4004, Ouachita Station Monroe, LA 71201; District III Office, P. O. Box 278, Tioga, LA 71477; District IV Office, P. O. Box 426, Ferriday, LA 71334; District V Office, 1213 North Lakeshore Drive, Lake Charles, LA 70601; District VI Office, P. O. Box 44095, Capitol Station, Baton Rouge, LA 70804; District VIII Office, 400 Royal Street, New Orleans, LA 70130.

JOE HERRING

by

Hugh Bateman
Waterfowl Biologist

Getting The Lead Out

Each year an estimated two or three million North American waterfowl die from the toxic effects of lead poisoning. This poisoning results from spent lead shot being picked up and swallowed during the feeding process. Considering that approximately 6,000 tons of lead shot are distributed across North American wetlands each year, it is not surprising that so many ducks and geese would ingest lead pellets.

It has not been determined whether waterfowl sifting through wet soils mistake lead pellets for grit material or food items; regardless, the results are the same. After lead shot is ingested, it passes into the gizzard where the strong grinding action and corrosive digestive juices reduce the pellets into soluble lead salts which are absorbed into the blood stream and body tissues. The toxic effects of the lead soon results in paralysis of the digestive tract, blood anemia, and assorted damage to body organs. Death may result from starvation or a host of complications that result from a breakdown of the bird's body functions.

Once a bird has swallowed lead pellets, one to four weeks may elapse before any distress or sickness is evident. An individual bird's diet, as well as the number and size of lead shot ingested, influence the severity and development of lead poisoning. Research experiments have determined that a diet of whole cereal grains, especially corn, is the worst possible diet for waterfowl that have ingested lead pellets. A single No. 6 shot is sufficient to cause death in wild mallards that are fed whole corn exclusively. In contrast, waterfowl feeding on animal matter or soft vegetation are much less susceptible to lead poisoning.

Losses from lead sickness occasionally take the form of spectacular dieoffs involving hundreds or thousands of birds in one area. More often, however, losses are of a continuing and chronic nature and may go unnoticed while affecting a single bird here and there over broad areas.

The most recently deposited pellets are thought to be primarily responsible for leading poisoning, therefore, problems may develop during or immediately following the hunting season. Controlled experiments have demonstrated that waterfowl which have ingested lead shot are more vulnerable to hunting than unaffected birds. Therefore, waterfowl which have ingested lead are often removed by hunting before they accumulate in large numbers. Waterfowl in the initial stages of lead poisoning are not harmful if consumed, but, occasionally, individuals in poor body condition are discarded when bagged by a hunter.

Lead poisoning outbreaks recorded in the United States date back over 100 years to the 1870's. Louisiana's first recorded lead sickness problem occurred 50 years ago in 1925, and articles appeared in most of the state newspapers which reported "thousands of ducks dying in Louisiana." In 1930, during February, a serious outbreak developed in a rice field below Gueydan near the Florence area. At the time a local resident reported that sick ducks had been observed in these rice fields for years.

The most serious problem area for lead poisoning in Louisiana is at Catahoula Lake. Waterfowl have been heavily hunted there since the 1870's and the long years of gunning have deposited tons of spent lead over the lake bed. Lead poisoning on this 20,000 acre wintering and hunting area has been known for over 75 years. Five major dieoffs have been recorded at Catahoula during the past 25 years, and the loss of birds there to lead poisoning is a chronic problem. Because of the importance of Catahoula Lake as a wintering habitat for waterfowl and as a hunting area, the Louisiana Wildlife and Fisheries Commission has studied the lead poisoning problem there in great detail. It has been determined that the top eight inches of soil around the perimeter of Catahoula Lake in 1965 contained over 29,000 lead pellets per acre. Obviously, the potential for lead sickness under such conditions is tremendous.

At the root of the problem is the very firm clay soil around the perimeter of Catahoula Lake. These soils occupy about 15,000 acres, and during the dry cycle, which usually occurs in late summer, produce an abundance of prime duck foods. When 2 to 8 inches of water covers these extensive flats, ducks, especially

Lloyd Poissenot

Lloyd Poissenot

A waterfowl biologist with a sick and dying duck. Field experience shows it's a victim of lead poisoning.

Bob Dennie

A faltering attempt to become airborne is a clear indication that lead poisoning has progressed beyond the hope of recovery.

Bob Dennie

Death finally overtakes a duck that has been subjected to lead ingestion and ultimately lead poisoning.

Bob Dennie

mallards and pintails, "puddle" into the soils seeking the seeds and roots of the wild grasses and sedges and, in the process, also pick up spent lead pellets. The primary food items for waterfowl at Catahoula Lake is a sedge called chufa. This annual plant grows in profusion over most of the lake bed and produces a small tuber or nut on the root system that is eagerly sought after by mallards, pintails, and diving ducks. Unfortunately, chufa, like whole corn, is deadly in combination with ingested lead, and is one of the contributing factors in the serious lead poisoning outbreaks at Catahoula Lake.

There is seldom a large build up of dead or sick birds at Catahoula Lake during the open hunting season. Most lead poisoned ducks, which, as previously noted, are much more vulnerable to hunting, are bagged by hunters before any accumulation can occur. Local hunters who are familiar with the lake are quite accustomed to seeing "cripples" or sick ducks that cannot fly or, when bagged, are found to be in extremely poor body condition. Many of these birds are suffering from lead poisoning. The spectacular dieoffs at this lake in the past have always occurred when huge concentrations of pintails and mallards were feeding for extended periods in the chufa flats after the hunting season had closed.

Southwest Louisiana's 500,000 acres of ricelands provide extremely attractive feeding habitat for wintering ducks and geese. Rice fields, because of their attractiveness to waterfowl, also receive a heavy annual dose of lead shot over firm soils that retain pellets for long periods near the surface. Very often, successful blinds are maintained in the same location for many years and the accumulation of lead pellets is progressive. Hence, Louisiana's rice belt is also a serious problem area for lead poisoning.

Louisiana's most recent lead poisoning dieoff occurred in Southwest Louisiana during late November and December of 1973. The outbreak was centered around the northern edge of the Laccasine National Wildlife Refuge and adjacent rice fields. Lead pellets were found in the gizzards of most sick and dead geese picked up during this outbreak. In addition, tissue samples taken from sick birds were found to contain extremely high and lethal levels of lead.

An estimated 2,000 blue and snow geese and about 100 white-fronted geese were believed lost during this outbreak. Even though thousands of pintail and mallard were in the same area, none of these birds developed lead poisoning. This, of course, leaves open to speculation the possibility that these geese may have picked up the lead shot during a migration stop some-

Hugh Bateman

The swollen neck of this goose is a certain symptom of lead poisoning.

Lloyd Poissenot

Analysis of gizzards taken from dead waterfowl in a laboratory will furnish information as to the number of ingested pellets consumed. Certain foods consumed along with the pellets will hasten the lead poisoning, and others will prolong the agony, but the end results are the same—death.

Bob Dennie

where to the north.

After years of expensive and detailed research on the problem of lead poisoning in waterfowl, only one feasible solution has been determined: the development of a non-toxic shot for waterfowl hunting.

Recently, the United States Fish and Wildlife Service created a storm of controversy by announcing a plan to reduce lead poisoning losses by requiring the use of non-toxic, steel shot. The federal proposal calls for a complete ban on the use of lead shot for hunting waterfowl in all states of the Atlantic Flyway by 1976, in all Mississippi Flyway states by 1977, and in certain specified problem areas of Central and Pacific Flyway states by 1978.

The Louisiana Wildlife and Fisheries Commission in public session October 31, 1974 in New Orleans, Louisiana adopted the following position concerning the U. S. Fish and Wildlife Service's proposed steel/non-toxic shot regulations:

> "The potential for lead poisoning as a factor in waterfowl mortality is growing yearly as available habitat shrinks and accumulation of lead pellets continues. We share with the Department of the Interior a profound concern over the annual losses occurring among waterfowl that ingest spent lead shot while feeding and subsequently die from lead poisoning. Our agency has investigated and confirmed a number of sporadic outbreaks of lead poisoning in Louisiana. Only last year a serious kill of lead poisoning involving lesser snow geese occurred in Southwest Louisiana near the Lacassine National Wildlife Refuge.
>
> We concur with the position that a substitute for lead shot in its present form must be found and placed in use in certain types of wetlands if this drain on our waterfowl resources is to be reduced. We do not, however, recommend the imposition of a total ban against the use of lead shot since there are many waterfowl hunting areas that do not contribute to the lead poisoning problem.
>
> Our agency is in the process of obtaining additional information on lead shot ingestion rates among waterfowl wintering in Louisiana. These ongoing studies should allow much better definition of the State's lead poisoning problem. Certainly many ducks and geese arriving in the State are transporting lead shot picked up while the birds are migrating down the flyways, but the percentage is not known at this time. Also, a major portion of Louisiana's game duck population is made up of species such as gadwall and widgeon, not normally susceptible to large losses from lead ingestion.
>
> A considerable portion of Louisiana's 4,000,000 acres of coastal marshes have extremenly soft, fluid-like soils, and in all probability are not contributing significantly to the lead shot poisoning problem. On this basis the Louisiana Wildlife and Fisheries Commission would strongly recommend that steel

shot be required initially on designated problem areas only. The selection of areas for using steel shot would be based on rigid criteria developed between the states and the U. S. Fish and Wildlife Service. These criteria should include such factors as soil types, water depths, type of food plants being utilized, and use of areas by susceptible species of waterfowl. This proposal should be implemented simultaneously on a nationwide basis and must be accompanied by an intensive monitoring program which would measure any changes that occur in present lead shot ingestion rates or lead residue levels among harvested waterfowl.

"We strongly urge that an area non-toxic shot requirement concept be adopted as an alternate to Interior's plan for a total ban on lead shot, since it affects fewer hunters. Additionally, fewer steel shot shells would be needed while pursuing the goal of substantially reducing lead inducted waterfowl mortality. Should monitoring programs reveal an unacceptable reduction in lead poisoning mortalities or lead shot ingestion rates, then more restrictive regulations can be imposed as needed at a later date. If the partial change to steel shot reduces lead poisoning losses of waterfowl significantly, then every effort should be made to compensate inconvenienced hunters by allowing more liberal harvest regulations.

"There is little doubt that all states share in the total lead poisoning picture to some degree and it is only fair that all share responsibility in a solution. However, the important point at hand is that a positive start in the direction of eliminating lead poisoning in waterfowl has at least been made."

Converting to steel shot will not by any means be an absolute and immediate end to the problem. Many tons of lead shot deposited by past years of hunting will surely continue to cause some problems. The use of steel shot raises additional questions of barrel damage, increased crippling, and higher cost for shells.

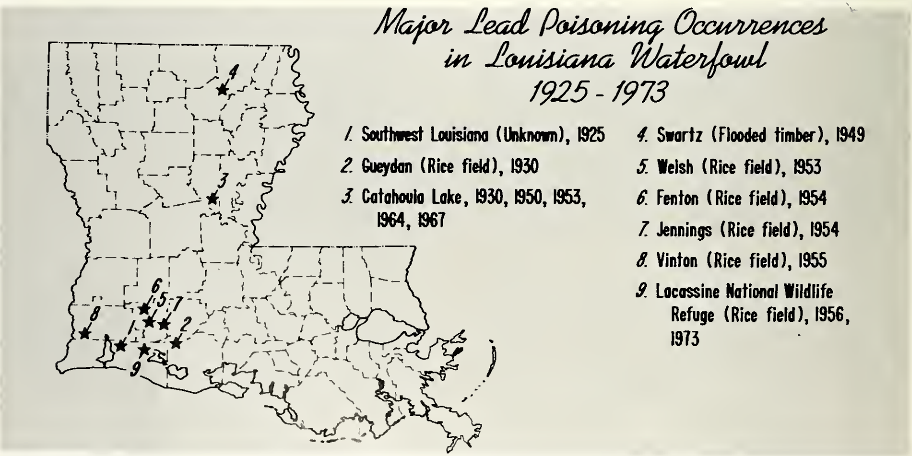
Those who have done the work on this problem in the past are still working toward the answers, and both conservation agencies and the arms manufacturing companies must continue a cooperative effort. We remain convinced that all or most of the undesirable features of iron shot can and will be worked out, and that an acceptable form of non-toxic shot be developed. The future of waterfowl hunting may well depend on it.

Incidence of Lead Shot in Gizzards of Important Game Ducks Bagged by Hunters in Louisiana 1938-1954

Species	**No. Examined**	**Percent With Lead Shot**
Mallard	319	15.1
Gadwall	127	2.4
Baldpate	38	2.7
Pintail	160	28.1
Green-winged Teal	157	3.8
Shoveler	13	0.0
Ring-necked	70	7.1
Canvasback	7	0.0
Lesser Scaup	107	26.2

*Illinois Natural History Survey, Bull. 27 (3), 1959

The information in the above table is rather out-dated but does indicate which ducks in Louisiana were most often affected by lead poisoning in the past. Commission personnel have been collecting gizzards from ducks and geese shot by hunters during the past two waterfowl seasons. The contents of these gizzards will be examined for ingested lead shot so that current lead poisoning problems in waterfowl wintering in Louisiana can be evaluated.


Major Lead Poisoning Occurrences
in Louisiana Waterfowl
1925 - 1973
1. Southwest Louisiana (Unknown), 1925
2. Gueydan (Rice field), 1930
3. Catahoula Lake, 1930, 1950, 1953, 1964, 1967
4. Swartz (Flooded timber), 1949
5. Welsh (Rice field), 1953
6. Fenton (Rice field), 1954
7. Jennings (Rice field), 1954
8. Vinton (Rice field), 1955
9. Lacassine National Wildlife Refuge (Rice field), 1956, 1973
1
2
3
4
5
6
7
8
9

These 14 major outbreaks of lead poisoning in Louisiana waterfowl indicate that Catahoula Lake and Southwest Louisiana's rice belt are our state's most serious problem areas. Lead poisoning indicated on the Lac. NWR results from waterfowl ingesting spent lead in surrounding rice fields and pastures, not in the refuge proper. Coastal marshlands, which have soft organic soils, appear to be of low importance in lead poisoning of waterfowl.

CHICOT LAKE

(Evangeline Parish)

KENNETH E. LANTZ
Fisheries Biologist

This 2,000 acre impoundment was created in 1942 by the damming of Chicot Bayou. It is located in eastern Evangeline Parish, 4 miles north of Ville Platte on Louisiana Highway 3042. The lake is also accessible to sportsmen driving south on Louisiana Highway 106 from Bunkie.

Chicot Lake is heavily wooded with cypress and tupelo trees. A central channel is located throughout the length of the lake, thus creating access to these wooded bays and flats. Boat launching facilities are provided at three areas of the lake (see map) by the Louisiana Parks and Recreation Department. This agency is in charge of management of the lake and adjacent parkland. Camping facilities, concessions, and nature areas are also provided in the park for sportsmen.

During the first ten years of impoundment Chicot Lake was known for its "chinquapin" or redear fishing. Numerous limits of this bedding fish species were taken from the vicinity of the spillway each spring. Gradual intrusion of submerged vegetation or "water weeds" into the shallow flats and bays of the lake resulted in reduced boating access and fish productivity. By the mid 1950's Chicot Lake was dropped from the list of most fishermen who sought out bream beds.

A water level drawdown program was begun on the lake in 1945 in an effort to combat the rapid spread of the water weeds. This program was not successful because insufficient drainage allowed water to be trapped in the numerous wooded bays. The lake was drained in 1963 and a canal constructed to facilitate better drainage during fall drawdown periods. Fish were restocked in the lake in winter of 1963 and spring of 1964.

Since 1966 Chicot Lake has again attained its status of a productive fishing lake. Bass, crappie, bluegill and redear sunfish are the principal catch of fishermen. The success of the water fluctuation program of the lake is revealed in reduced occurrence of troublesome submerged vegetation and the consistent catches of fishermen.

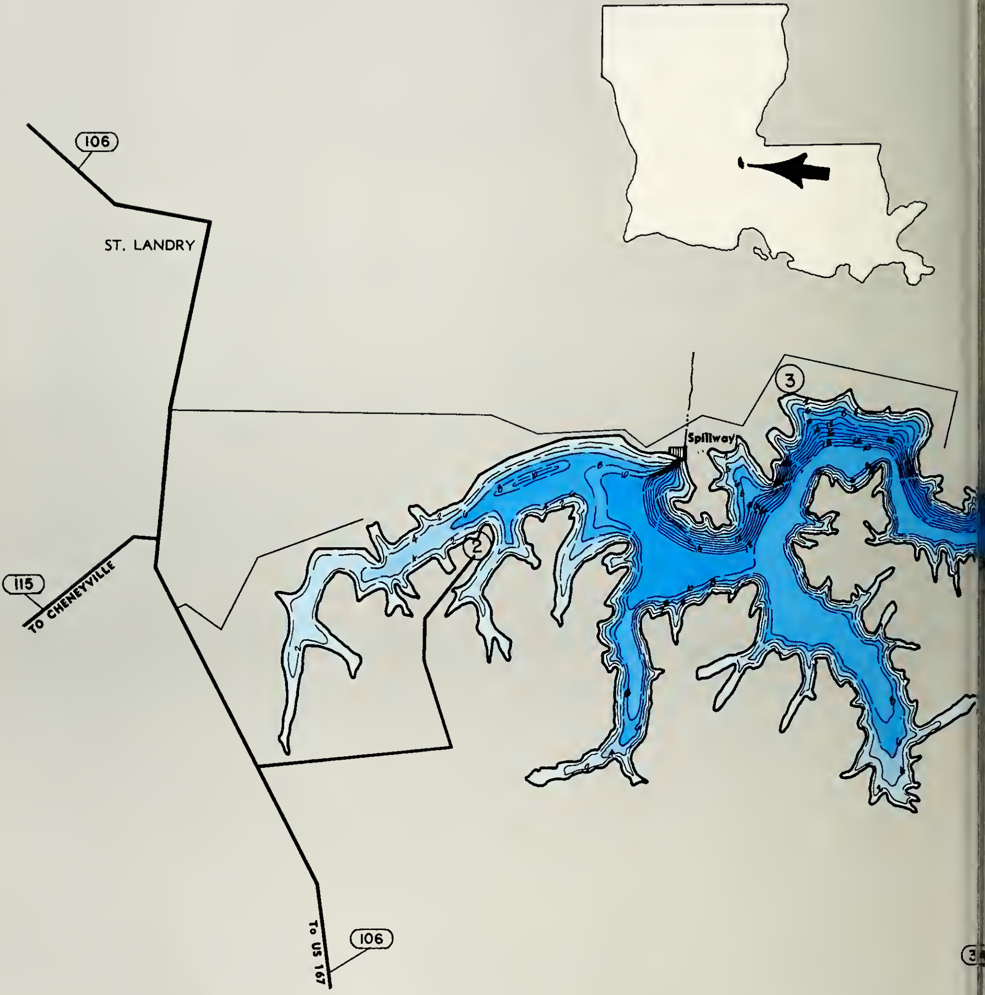
Fish population samples taken by the Louisiana Wild Life and Fisheries Commission in the summer of 1970 indicate the value of lake management. The total standing crop of fish per acre was 204.40 pounds. Of this total, 10.92 pounds were largemouth bass, 6.76 pounds were crappie, 16.34 pounds were bluegill and 7.69 pounds were redear sunfish.

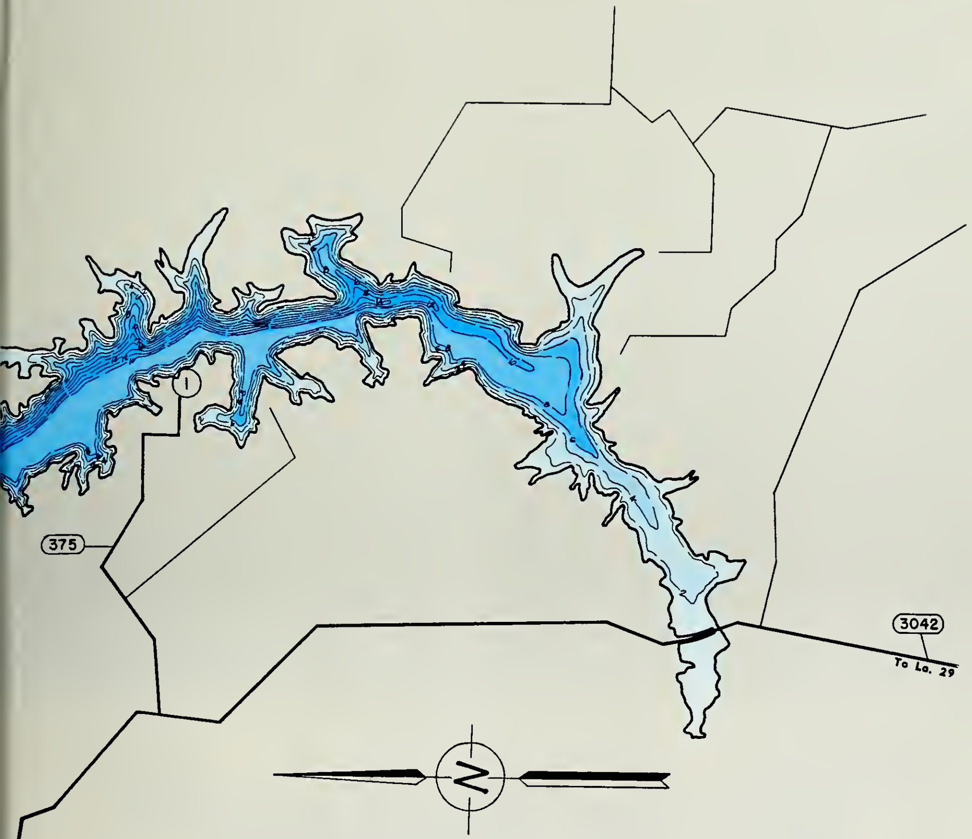
Boating and water skiing enthusiasts also utilize Chicot Lake during the summer months. A well defined skiing area is located near the spillway levee.

If you desire to fish a productive fishing lake or just enjoy the scenic beauty of a lake of moss covered cypress trees, Chicot Lake will provide this and more.

CHICOT LAKE FACILITIES DATA

LANDING	Boat Launching	Launching Fee	Rental Boats	Boat Storage	Rental Motors	Fuel	Oil	Bait	Guide Service	Refreshments	Rest Rooms	Playgrounds	Ice	Drinking Water	Water	Electricity	Shelters	Tables	Grills	Firewood	Trash Cans	Camping Area	Trailer Space	Cabins
1. Chicot Park Public Landing	X	X	X					X		X	X	X	X	X	X	X	X	X	X		X	X	X	X
2. Chicot Park Public Landing	X	X	X					X		X	X	X	X	X	X	X	X	X	X		X	X	X	X
3. Chicot Park Public Landing	X	X	X					X		X	X	X	X	X	X	X	X	X	X		X	X	X	X


106
ST. LANDRY
115
TO CHENEYVILLE
2
3
Spillway
To US 167
106



LAKE CHICOT

0 1.0 2.0

SCALE IN MILES
POOL STAGE: 46.0′
CONTOUR INTERVAL: 2.0′
DATE: 1971

"Brer Bear" in the Bayou Country

by
Louis E. Brunett, Jerry Farrar,
and Joe L. Herring

Photography by
Bob Dennie

Originally, the black bear could be found throughout the wooded sections of North America, including many portions of Louisiana, and the animal served as food for both the Indians and the white settlers. But, the white man, with the far reaching effects of his growing population and encroaching civilization, has now restricted its range to large forested areas which, due to rough terrain and associated poor soils, have not been subjected to clearing for agriculture or other land uses. In Louisiana, as elsewhere, bears are now present only in the areas which allow them to secure a living without unduly interfering with man's interests.

Bear are rather scarce in our state in comparison with deer and other game animals, and they have become progressively so since approximately 1920, according to available records. An 1890 statewide survey of parishes containing bears showed 17 parishes, all within the Mississippi-Atchafalaya region, to be inhabited by these animals. This range appears to be greatly reduced from the primary, original, black bear range within our state, which is believed to have been the denser bottomland areas of the Mississippi, Atchafalaya, Tensas, Red, Ouachita, Pearl, and other major rivers and no doubt, to some extent, the lesser bottomland areas within the drainage basins of each. It seems that bears in Louisiana have always been primarily bottomland hardwood dwellers requiring dense, remote canebrakes to reach peak populations.

The encroachment of civilization, as previously mentioned, during the next 25 years forced the retreat of black bears within our state to isolated regions that offered the best remaining habitat. The regions, barring a few scattered localities which supported a bear or two, were generally confined to the Madison, Tensas, East Carroll and West Carroll Parish area of the Mississippi delta, and to the lower Atchafalaya River section of St. Mary and possibly adjacent parishes. Here, bear, seemed to have barely held their own for a decade or so. During this period, seasons were opened and closed for bear hunting without much justification and few animals were legally killed.

The advent of modern drainage accompanied by profitable production of agricultural crops, particularly soybeans, has since brought about the wholesale conversion of millions of acres of prime bear and deer habitat into farm land. For this reason the last ditch stand of black bear in the northern region of Louisiana has faded to a few individuals on remaining large wooded areas. The majority of these areas, largely unsuitable for agriculture, are batture lands, immediately adjacent to the Mississippi River as well as within the former Chicago Mills Wildlife Management Area in Madison and Tensas Parishes. Native populations were probably forced to relocate in nearby Mississippi and Arkansas woodlands. Many were lost to illegal hunting, highway accidents, and other causes. Under present trends of land clearing for agriculture in this highly productive delta area, black bear populations in some areas are inevitably doomed. The extent of habitat destruction in the lower Atchafalaya region has not been as great, but many adverse factors exist in this area. Channelization of the Atchafalaya River with accompanying alterations of habitat conditions, as well as increased encroachment on the wilderness aspect of the area, may spell a similar doom for the remanent population of black bear holding out there.

The earliest mention of the Louisiana black bear *(Euarctos luteolus)* was made by Antoine Simon LePage du Pratz, who, in his writings in 1774, tells of his visits to North America and of hunting black bear in Louisiana canebrakes along the Mississippi River as early as 1750. He also told of how the natives of the area smoked hibernating bears out of den trees and killed them with arrows as they emerged.

Chene Verts, in his writings of the 1830's, tells of a bear hunt on which a large black bear was killed at Live Oaks, Louisiana, on October 1, 1828, along Bayou Grand Caillou.

Theodore Roosevelt, in 1908, writes of a bear hunt, in Tensas Parish in October, 1907, in which he participated while President of the United States. Roosevelt informs us that a few years earlier black bears had been extraordinarily plentiful in the swamps and canebrakes on both sides of the Lower Mississippi. By the time of his visit in October 1907, their numbers were already greatly diminished, perhaps because of the work of the old southern planters who for a century past had "followed the bear with horse, hound, and horn in Louisiana, Mississippi, and Arkansas." Roosevelt further tells of an old ex-slave who was in charge of the dogs on the 1907 hunt and who had killed or assisted in the killing of more than 3,000 bears. Roosevelt's writing of this hunt is most interesting and is worthwhile reading for anyone.

However, we must not look at the bear as a game animal of the past, but as an important game animal of the future. With proper management of the

Joe L. Herring

remaining habitat, something can be done for the bear as a future big game animal, to a limited degree at least.

The length of bear seasons or season limits prior to the 1900's are not known for certain. However, there was a season limit of five bears per hunter in the early 1900's. No hunting was allowed in 1929, but the season was reopened in 1930 with a limit of one per season. Few bears were harvested throughout the following years and if one was killed it was considered a rarity. The bear season was closed following the 1964 hunting season as the bear population throughout the state was thought to be very low, and a restocking program had been initiated. The bear season, statewide, has remained closed until this year, the 1974-75 season, when a small area in the Atchafalaya River Swamp was opened. This area was one of the restocked areas where the animals responded well and the short season scheduled can now be safely held.

Bear predation on goats and hogs was reported on West Cote Blanche Island in St. Mary parish, in 1962. Louisiana Wildlife and Fisheries Commission personnel trapped and removed eight adult bears from there in 1962 and 1963. These were released in the woodlands that at that time comprised the Chicago Mills Wildlife Management Area in Madison and Tensas Parishes.

During the summers of 1964-67, black bear were trapped in Cook County, Minnesota, and transported to Louisiana for restocking purposes. A total of 161 bears were released of which 41 were adult males, 40 adult females, and 80 were cubs and yearlings. Of the total number, 39 were released in Madison and Tensas Parishes and the remainder in the Atchafalaya River Swamp. These bear were ear tagged at the Minnesota trapping sites.

Over a five year period, 1965-69, tags were received from 30 of the released bear that had met death by various means. The reported causes of mortality were highway kills, train kills, illegal shooting, overdose of tranquilizers, and some causes of death were unknown.

The black bear now found in Louisiana are two of eighteen subspecies found on the North American continent. Originally it was recognized that this state had one subspecies, *Euarctos americanus luteolus*. The Louisiana Wildlife and Fisheries Commission's trapping and restocking program from 1964 through 1967 introduced another subspecies, *Euarctos americanus americanus*. The major difference between these two species is in the slope of the skull.

Although referred to as the black bear, the coloration of these animals may range from the more common black color to almost white. The bear now found in Louisiana are typically black as are their other relatives in the Eastern United States. They are the smallest of the bears of North America, with the weight of full grown individuals varying between 200 and 300 pounds. Very large males may even tip the scales at more than 500 pounds, but this is the exception. The black bear will generally measure 2 to 3 feet high at the shoulders and may on occasion reach 5 to 6 feet in length, including head and body.

Bob Dennie

From 1964 through 1967 Minnesota black bear were trapped then transported to Louisiana where they were released in areas that contained suitable habitat for their needs.

Black bear reach sexual maturity at about three years of age. Mating usually takes place in July. Being born in February, this makes the female, commonly called a sow, about three and one-half years old at the time of first breeding, and four years old when giving birth to her first litter. She then breeds only every second year.

After breeding, and the egg is fertilized by the semen, there is a delay in the development of the fetus. This is referred to as delayed implantation. Development of the fetus begins about the first of October.

In February, about 7½ months after mating, the expectant sow gives birth to her cubs. The young are born while the sow is in hibernation. Some authorities say the sow may have young and never know it.

When the young are born they are naked, blind, toothless, and have tiny undeveloped ears. Somehow, the cubs manage to get to the teats of the sow. When born, the cubs are eight to ten inches long and weigh six to eight ounces.

The number of cubs in a litter may vary from one to five, with two being the most common. Usually the first time the sow breeds she has only one cub. She is equipped with four nipples, but if she has five cubs this appears to pose no problem. Since two is the common size of a litter and the sows breed every second year, it can readily be seen that sows average only one cub a year. Taking into consideration the slow reproductive capacity and actual habitat in Louisiana, the bear must be a master in avoiding man to even maintain his population. However, bear often live to be twenty-five years of age, and a healthy female may bear young until she is twenty years old.

When the sow emerges from hibernation, about the middle of April, the cubs have a black coat of fur and weigh about four pounds.

Once out of the winter den with the mother, life really begins for the cubs. First the cubs are taught to climb and they soon learn to scramble up a tree at the first sign of danger and stay put until the mother gives them permission to come down. The sow is tolerant and patient in her teaching, but will give any disobedient cub a swift cuff with her paw.

By fall the cubs will weigh about 40 pounds each and must prepare for their first winter of hibernation. They may all crowd into one den with their mother or make a separate den in a group. By the following spring the cubs, now well grown, are old enough to forage for themselves. Family ties are not broken until the mother shows her willingness to accept the attention of another male.

The entire association of adult male bear, known as the boar, with the family or the female is limited entirely to reproduction. The adult male and female show not the slightest interest in each other until some time in the early summer. During the mating season there is a considerable amount of affection displayed between the sexes, and males may fight fierce battles for possession of females, but it is soon over. In about a month or less, the honeymoon is ended and forgotten. Males and females have gone their separate ways. For the next two years the female will not tolerate any attention from the male. The boar bear has nothing to do with raising his offspring.

In 1970-71, David F. Taylor, a Louisiana Wildlife and Fisheries Commission biologist, in cooperation with Louisiana State University, studied the Minnesota bear restocked into the Atchafalaya River Swamp. During the period of September 1970, to October 1971, Taylor captured six bear, fitted them with radio transmitters and monitored their movement. The six bear studied included three adult females, two adult males, and one male cub. Taylor's findings were most interesting, and some will be related to you in the remainder of this article.

Black bear are omnivorous in their food habits, which means they will eat practically any type of food, plant or animal. Their food habits are almost identical to that of a pig. This includes berries and other fruits, seeds, insects, grubs, roots, nuts, fish, and a variety of other things including low forms of animal life.

It is reported that bear may occasionally eat meat or animal matter in one form or another, such as mice and squirrels, and as reported earlier in this article, in 1962 pigs and small goats were being taken by native Louisiana bears. A bear's diet is as much as 95 percent vegetarian, however. Oak mast, especially live oak acorns, muscadines and blackberries are consumed in large quantities.

Biologist Dave Taylor gathered a great deal of important information on bear in Louisiana. Six study bear were fitted with radio transmitters and their movements monitored for over a year.

Bear like water and consequently do not live far from it. They drink freely and like cool muddy places to wallow, perhaps to escape insects or merely to indulge in what is considered a luxury.

Bear hibernating, in Louisiana, has always been a question of much discussion. We know that in the north these animals do hibernate from late October or early November until late April or May. In the South it was believed that the bear did not hibernate, but retreated to a den consisting of a hollow log, hollow tree, or thicket, during periods of extreme cold weather and emerged when the cold weather passed.

Taylor made some interesting discoveries pertaining to the restocked bear and hibernation in the Atchafalaya River Swamp. He located one of his adult female bears in a hollow tupelo gum that stood in water at the edge of a slough. This tree measured five feet in diameter at breast height, and the entrance to the hollow was 30 feet above the ground. The bear was found to be sitting upright in the bottom of the cavity, which was at ground level. The bear later moved to another den in a cypress a mile away. This tree was well over 100 feet tall and seven feet in diameter. The cavity entrance was estimated to be 96 feet above the ground and the tree was estimated to be 24 inches in diameter at that point. The depth of the cavity could not be determined.

Taylor found another bear, a male, denned in a hollow green ash. This tree was five feet in diameter and was a hollow shell with the opening eight feet above the ground. The bear was curled in the bottom of the cavity some six inches above ground level.

Taylor also found a second of his study females denned in a hollow cypress that was 60 feet tall and seven feet in diameter. The cavity opening, 14 inches wide, began 30 feet above ground and extended 14 feet up the tree.

Taylor found that these transplanted bears did hibernate, and the period of hibernation varied from 74 to 124 days. This observed period occurred between November 17, 1970, and March 20, 1971. There was considerable evidence that some of the bears moved in and out of their dens during this time while supposedly in hibernation. One of the females gave birth to cubs while in the den.

Some authorities report that the bear does go into a winter sleep but it is not as profound as that of other animals that actually hibernate. They report that the bear goes into a state of "torpor", that is, a sluggish state with body temperature and breathing remaining normal.

By late fall the bear has converted the vast amount of food consumed, to surplus fat that now encases its body. In this manner, it builds up a storage of food and energy to be used during the lean period of deep winter slumber in its den.

Bear, by nature, are wide rangers, covering areas often in excess of 15 miles in diameter in search of food or merely roaming over territory they consider to be their own. Game managers refer to this territory as the home range of the animal. Prominent trails, tracks, wallows, logs and stumps torn up in search of grubs and insects, and clawed marks on trees are well recognized signs of bear inhabiting an area. Reportedly, boars in marking their home range, have a tendency to stand on their hind feet and

Some of the bear that were fitted with transmitters were tracked down to huge hollow trees, sometimes reaching 100 feet in height, deep in dense swamp.

make claw marks high upon the side of trees with their fore feet. It is believed that once a boar starts marking one of these trees, he starts at the base and, each time he passes by, he smells the tree and makes marks a little higher.

Taylor reports that in his study the activities of five bear were monitored long enough to determine their minimum home ranges, but minimum daily ranges were obtained on only three animals. The minimum home range varied from 4,365 to 39,040 acres with an average for all bear of 13,795 acres. The minimum daily ranges for three bear varied from 41.6 acres to 410 acres with an average of 287.2 acres. The minimum distances traveled varied from 3.5 to 21.5 miles from the trap site. The average for all bear monitored was 10.1 miles. One bear moved 20 miles in 73.5 hours.

The minimum home range for two adult male bear averaged 27,440 acres with the average travel radius being 20.0 miles. The minimum home range for two adult female bear averaged 4,866 acres with the average travel radius being 3.5 miles.

While traveling their home range the bear is rather inquisitive and may investigate anything that attracts its attention. This curiosity coupled with the wide home range and diminishing habitat brings the black bear into contact with man much too often for its own good.

The black bear, with its inquisitiveness, is intelligent, and although it is not considered a dangerous animal, it should not be trusted. It is said that the black bear never reveals its intentions before hand. In most instances black bear will make a hasty retreat into the forest at the approach of man. If the bear stops and makes a noise like a rasping cough, take notice: this one may be different. There are rare instances where a black bear has made unprovoked attacks on man. However, the sow will take the means of attack to protect her cubs from man. Too often the word "bear" strikes an inherent fear in the hearts of most people, and these animals are automatically regarded as dangerous vermin to be exterminated. But given a chance the bear will not bother man. Attacks on man for the purpose of protecting the cubs compares to the action of the docile milk cow, which will not hesitate to protect its calf from man.

Wildlife management practices used by most bear hunting states are rigid protection and bag limits of one bear per season. In addition, hunting seasons are closed and restocking often initiated where numbers of black bear are dangerously low. Both of these measures have been taken in Louisiana.

The loss of vast acres of bottomland hardwoods to agriculture and other interests in the Mississippi River Delta of northeast Louisiana started a decisive trend toward gradual extinction of black bear in that area. Only a reversal of these agricultural trends could forestall this happening. The vast Atchafalaya area offers the last hope for bear in the bottomland areas in our state.

On the other hand, millions of acres of game habitat in the hill areas of Louisiana is developing rapidly into an isolated semi-wilderness condition. If the black bear could find this area to his liking, he would be back in business again. Just how common bear previously were in these areas is not known. Indications are that at least they did occur there, even though large bottomland areas seemed to be preferred and are the areas of last retreat. Vast acreages are owned by timber companies in west and northwest Louisiana, rapid urbanization promises the needed element of isolation, and lesser bottomland areas of creeks and small rivers that are present might meet the need for this type of habitat. It will be essential, however, that forest management practice provide for the maintenance of a plentiful supply of these hardwood areas.

The purchase by the Louisiana Wildlife and Fisheries Commission of bottomland hardwood tracts for wildlife management purposes may offer limited possibilities for bear, especially if more and larger tracts relatively free from annual flooding are obtained.

The maintenance of very large blocks of isolated forest containing dense understory has been, and will continue to be, the soundest management practice available for bear. The area must be large enough to enable bear to go about their normal activities with little or no contact with man. Annual floods and other occurrences must not force them onto lands where interference with man and his interests will result.

The future of bear in our state will depend almost solely upon two factors, which are: Agricultural and forestry trends that will determine the availability of suitable habitat; and the interest and tolerance shown by man toward restoring populations of these animals.

Some authorities report that a bear will go into a winter sleep but it is not as profound as that of other animals that actually hibernate.

"WE GET LETTERS..."

Nutria Recipes

Dear Sir:

I have often wondered why the nutria carcasses weren't collected and put on the market for home consumption due to the delicious taste when cooked. I had eaten many rabbits in my time, but since eating nutria, when in season, for the past ten years, I am convinced that rabbit with its wild marshy taste cannot be comparable with nutria with its delicious and nutritious taste.

Besides the pelt, there is a thin layer of film (skin and fat) that should be removed before cooking the meat.

Joseph C. Loga
P. O. Box 7
Port Sulphur, La. 70083

P.S. I'm not a hunter or trapper but receive the nutria carcasses from friends that are in the business.

Alligators

Alligator Crossing
West Lake, Louisiana 70669

Gentlemen, Good Morning!

You will have noticed the return address above; rest assured, it is genuine and is the subject of this communication. The purpose of Alligator Crossing came into being was as a Tourist Attraction in Louisiana.

Backing up, one night some months ago, on my “Hotline” radio Talk Show on KLCL-NBC, Lake Charles (with studios and transmitter located across the river in Westlake), someone called and asked whether it were true that I had moved over to Westlake. I said I had, and their next question was, “where?”

On the spur of the moment, I replied that I had moved to the “alligator crossing”, referring to the small bridge by the Marina in Westlake, on the Calcasieu River; we do have gators, and they do “cross” there, although **under** the bridge and not **across** Hwy. 378 (or 379, whichever seems appropriate) which runs along the river at this point.

Well, the name was funny and it stuck. My house didn't have a mailbox and I had to buy one and paint my name and address on it; since I had said I lived at the “alligator crossing,” that's what I wrote on the mailbox . . . and the Westlake Post Office went along with it, having a sense of humor as most postal people do.

So, now I officially lived at Alligator Crossing; next came my new Driver's License, Voter Registration, etc., which all indicates that I do, indeed live at Alligator Crossing. The fun was just beginning; I wrote a letter to our Ward 4 Police Juryman, Lawrence Fabacher, explaining to him that we might just “whup us up” a tourist attraction if the little bridge had never been named, and could now be officially designated as “Alligator Crossing.”

Lawrence liked the idea, and together with Pete Manena, another Juryman, they pushed it through Committee, and the bridge was officially named “Alligator Crossing,” by the Calcasieu Parish Police Jury. That was several months ago.

Yesterday, a maintenance truck arrived and installed the signs marking the bridge. Sure enough, they read “ALLIGATOR CROSSING” and can be easily read from either direction!

So there it is, up to now. Everyone in the sporting world has heard of a DEER crossing; now, Westlake, Louisiana has the FIRST **Alligator Crossing** in the world!

And here's where opportunity knocketh . . . would the Conservationist like to be the FIRST publication to do an “alligator” interest story on Alligator Crossing? A picture and a paragraph might stir up quite a bit of interest.

Our next move is to get it on the newswire and on National TV; should you decide to cover this potential story, please tell Lloyd to bring his own alligators to pose; we don't disturb ours.

Sincerely,
Alan Hunt

Dear Editor:

I have read many wildlife magazines which say that animals cannot see red at night. Is this true?

Sincerely,
Bruce Dupont
Simmesport, Louisiana

Dear Mr. Dupont:

Believe it or not, yours is a question that is often asked of us. You didn't mention which animals you were specifically interested in, but some species can see color and others cannot. Dogs, deer and many other mammals cannot see different colors, while most daytime flying birds (such as ducks, pigeons and small birds) can. Some animals, like cats, are thought to be able to see colors, but only the family which includes apes, monkeys and man can distinguish colors well.

The Editor

Fishing in the Gulf of Mexico off Louisiana's coast is a year round recreational opportunity for residents of the Bayou State. But while thousands of anglers flock to the Louisiana coast for summer fishing fun, not nearly as many fishermen take advantage of the great winter fishing in the Gulf.

Which is too bad, because party boats out of Grand Isle, Empire, Venice, and Cameron, all major jumping off ports for salt water angling in the Gulf of Mexico, bring in huge catches of fish even in the coldest weather. In fact, there are many old salts who will tell you that winter fishing off the coast, whether it is trolling for big ones or rig fishing for a succulent supper of snapper or white trout, is even better than summer angling in the same waters.

"We are finally getting the message across," says Captain David Fink, veteran charter boat captain at Grand Isle. "People are beginning to realize that they can catch just as many fish here in February as in July—and with this additional advantage: There are not nearly as many sport fishermen on the water in the winter, and the cold weather angler will usually have the best spot for himself,"

Fish don't seem to care whether its winter or summer off the Louisiana coast. Fishing the oil rigs is perhaps the most popular – and productive – method used by charter boat captains during the cold months. In one recent trip aboard Capt. Fink's beautiful, 47 foot, aluminum BLUE FIN, a party of six landlubbers fished the rigs and hauled in more than 250 pounds of king mackerel and four ice chests of white trout, croaker, red snapper, blue fish, and other tasty denizens of the deep. Some not-so-tasty fish—including a number of feisty sharks and hard tails—were also hooked, and more than one fish was brought aboard with its body neatly slashed in half, mute testimony to the violent struggle for survival in the teeming waters below.

"A lot of people who have never been salt water fishing think all you do is sit in a deck chair and watch an outrigger troll your bait until a giant marlin strikes," says Fink, at 56 a veteran of 23 years in the Charter Boat business. "We do a good bit of that in the proper months, but I always figured my main job was to catch fish. That's why, when I have a party of real meat fishermen, I almost always head for the rigs: That's where the fish are."

The list of fish anglers pull from beneath the big rigs is almost endless, and includes, in addition to those species already mentioned, amberjack, barracuda, pompano, flounder, cobia, grouper, jewfish, sheepshead, spanish mackerel, and many more. If you hit it right, rig fishing can be an amazingly fast and furious sport.

YEAR 'ROUND

"Sometimes we get a boat load of people who say they don't want to rig fish" Capt. Fink says, smiling. "All they want to do is troll all over the Gulf. But once I get them to agree to spending a little time trying the rigs, and those fish start coming over the side, they change their minds real quick. When you're fishing, you can't beat catching fish."

The king mackerel is fast becoming the most sought after winter fish off the Louisiana coast, and the really big ones are found under the huge rigs, two hours run from Grand Isle. Most kings are caught on live bait—white trout is the best, Capt. Fink says—with two number 10 gold hooks (see photo) rigged fore and aft. Usually, two poles rigged for kings are placed in rod holders at the stern so as not to interfere with the bottom fishing for snapper and trout. As many as eight fishermen can be going after bottom feeders with double hook rigs on each line, while the mate helps bait and remove fish from the hooks and keeps a wary eye on the mackerel rods. The action gets so fast when the bottom feeders begin to hit —everybody shouting at once, many fishermen tied into two huge trout or snapper at the same time—that a pulsating mackerel pole goes unnoticed until the mechanical scream of the reel draws everyone's attention.

And that's when the fun begins. Fun and work because bringing a rampaging fifty pound king to the gaff is no easy feat. In fact, kings rank very near the top in fighting heart among game fish in southern waters. Most kings will make two determined runs, the first beginning the instant he feels the hook. Usually, the lucky angler who gets to play the fish takes the rod from its holder in the middle of this first run, a tremendously exciting way for a novice to break into the fun and sport of cold weather salt water fishing off the Louisiana coast. Most anglers fight kings while standing on a pitching, slippery deck,—a tricky feat. A slip on the deck or a momentary loss of concentration, and a big king will rip himself loose or snap a fifty pound line as if it were thread.

"You've really got to concentrate to get a big king in," says Myron Ficher, the BLUE FIN's more than competent deck hand—he has his college degree in marine biology. "The trickiest part is bringing them to the gaff. They have to be whipped before you gaff them. Kings are tremendously strong, even when they are tired out, and one mistake with a green fish close to the boat and it's lost."

Even gaffed, a game king is still full of fight and fury, and a boated one loose on deck can keep everyone,—captain, deckhand, and fisherman—hopping and pussyfooting because kings are well equipped with razor sharp teeth (a fact to which this writer can attest, having once been bitten—to the bone—when a still "green" king

FISHING FUN

by Bill Winn

Photography by
Lloyd Poissenot

The rig fisherman has little idea what is on his line until he brings his catch to the surface.

White trout make the best bait for king mackerel.

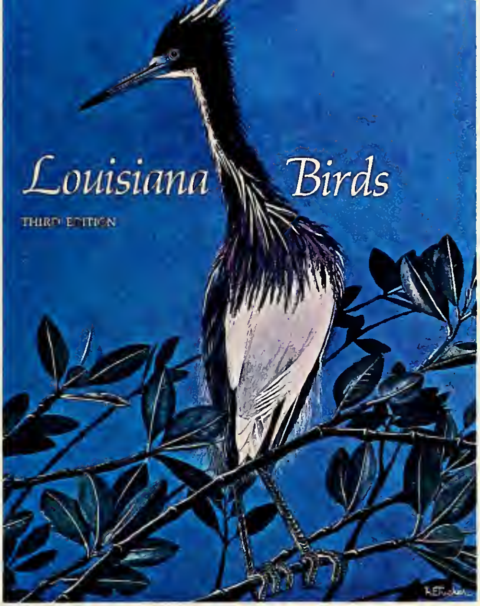
latched onto a bare big toe!).

But king are not the only reason seasoned salt water fishermen head for the rigs when cold weather comes around. More succulent table fare awaits the winter fishermen: red snapper abound in the richly productive waters beneath the big rigs, as do white trout and that favorite of gourmets, pompano. Most of these fish are taken while bottom fishing, a type of angling any fresh water fisherman will recognize for its similarity to cane pole fishing. The similarity ends there, however, because when a novice salt water angler hangs his first snapper "double," he usually forgets pretty quickly about that eight pound bass that got away in Toledo Bend or that string of sac-a-lait he brought home from the Pearl River. Two fifteen-pound snappers on the end of a plunging rod is enough to make most fishermen forget anything for the moment, at least.

Of course, until the fish is brought to the surface, the angler has little idea *what* is on the end of his line, and that's part of the fun and mystery of salt water rig fishing. Anything from a 100 pound jewfish to a shark could be his prize, and if you like variety in your catch, then rig fishing is your sport. One night after six fishermen completed a winter rig trip aboard Capt. Fink's BLUE FIN, they sat down to a dinner of fried, baked, and broiled filets of snapper, mackerel, croaker, white trout, blue fish, and even shark. Everything but the shark was a hit —"tasteless," one eater remarked of the shark—and all the fishermen agreed that to purchase such a meal in any restaurant would have been impossible.

One of the pleasant surprises of a winter fishing trip to the Gulf is the relatively low cost. An average price for an eight-man all day charter out of Grand Isle is $200 or $25 per man. Most of the seven boats on the island are chartered weeks in advance, so it is imperative to get reservations in early. Incidental expenses are minimal, but it is a good idea to check in advance as regards to tackle (most boats furnish this), food and beverages, and sleeping accommodations ashore. Also, remember to take a large ice chest. It is a rare trip indeed when a charter boat returns from the rigs without a big catch.

If you like to fish, or just enjoy the outdoors and get tired of spending so much of the cold months indoors, give the Gulf a chance in Winter. Chances are that you will bring home enough fish to keep you well supplied until your favorite sac-a-lait spot starts producing again.



In his new, completely revised edition of LOUISIANA BIRDS, Dr. George H. Lowery, Jr., the foremost authority on the subject, describes the 411 species of birds that have been discovered in the state, including 43 species that have been discovered since the book was first published in 1955.

For this third edition of what has become a local classic in bird lore, nearly every species account has been rewritten and updated to include information that has become available since the previous editions were published. The species descriptions are preceded by several general introductory chapters in which a wide range of topics is discussed: Louisiana as a place to see birds (Louisiana ranks among the top five states in the nations as a place to see birds); how to identify birds; feathers, plumage, and molt; the migration of birds; their economic value; how to attract birds; and conservation and wildlife management.

The new edition of LOUISIANA BIRDS is generously illustrated, as were its predecessors, and contains 14 full-page four-color plates; 99 photographs of birds; 14 full-page habitat photographs; 147 figures; and 16 bar graphs showing the seasonal distribution of all 411 species.

"Unlike most of the mammals, which are difficult to observe in the wild," says Dr. Lowery, who is also the author of the recently published THE MAMMALS OF LOUISIANA AND ITS ADJACENT WATERS, "birds permit themselves to be seen and studied without exasperating effort . . . Birds are just elusive enough. They provide a quest, a lure, the end of which is attainable but never quite attained in any man's lifetime."

Dr. Lowery, who is Boyd Professor of Zoology and Director of the Museum of Natural Science at Louisiana State Univeristy, is a former president and a permanent member of the executive council of the American Ornithologists' Union. He describes the writing of LOUISIANA BIRDS as "a pleasant task," and one which rekindled many memorable experiences spent birding in Louisiana and around the world.

Dr. Lowery expressed his gratitude to the members of the Louisiana Wild Life and Fisheries Commission and to Mr. Ted O'Neil, Chief of the Commission's Fur Division, for endorsing the plan of the book and arranging for its publication. "Mr. O'Neil particularly has devoted himself assiduously to helping me in every way possible," said Dr. Lowery.

LOUISIANA BIRDS is 720 pages, and is available for $15.00 from local bookstores throughout the state or by ordering from Louisiana State University Press, Baton Rouge, 70803. (Add 3% sales tax for Louisiana residents.)

ORDER FORM

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Please send me_____copy (copies) of *Louisiana Birds* at $15.00 per copy. Also, send me_____copy (copies) of *The Mammals of Louisiana and Its Adjacent Waters* at $15.00 per copy. Check or money order for $________is enclosed. (Payment must accompany order. Louisiana residents add 3% sales tax.)

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Red Head Duck

Ron Louque... Blending

Yellow-Crowned Night Heron

Woodcock

Ron Louque, a 22 year old Louisiana artist who specializes in realistic portrayals of birds in their natural habitats, is rapidly becoming one of the best wildlife artists the South has yet produced. Though he has had no formal art background, he has attained a degree of excellence in only three years of painting that few achieve in a lifetime. His lifelong love of nature and interest in birds and animals has been the catalyst for this accomplishment.

When he was eight years old, he was introduced to the fascinating study of birds, with the acquisition of his first Peterson *Field Guide*, and can remember spending many hours in competition with his friends, learning to recognize the various species that occur in Louisiana. At the age of 11, Ron enrolled in a correspondence course in taxidermy, an interest which soon became a passion for him, and a skill which he has perfected to the highest level.

It was this keen interest in taxidermy that led him to the field of wildlife art. Upon visiting the Museum of Natural Science at Louisiana State University, when he was enrolled as a freshman, he became aware of the possibilities afforded him as a master taxidermist. The large habitat groups on view in the museum, with their infinite attention to detail and beautiful panoramic back-

Art and Nature

By Linda Ann Kennedy

Hooded Merganser

Male Pintail

Red Tailed Hawk

grounds, captured his imagination and so impressed him that he decided to enter this field. While practicing painting habitat backgrounds, he discovered his special aptitude for portraying birds in their natural settings, and since then has specialized in this field. He says, "you are closer to nature in art than in taxidermy. Mounting a bird is purely mechanical, but painting a bird involves a great deal of study."

Ron strives for realism in his art, both in his depiction of each bird and in the accuracy of its botanical setting, a goal which is not always easy to attain. "It is amazing how much you don't see unless you know what you are looking for", he says. In order to authenticate his paintings, Ron works primarily from museum specimens and from careful observation of live birds in their natural habitats. Many hours are spent in the Atchafalaya Basin, where he is undisturbed in this study.

In the future, Ron hopes to expand his art, working also with mammals, and plans to illustrate several wildlife books. But his main concern is to aid conservation efforts through his paintings, creating in others an awareness of the natural beauty in our world and thus, hopefully, a greater appreciation for it.

Snowy Egret

PIE'S POTPOURRI

By Marian "Pie" Pendley

Quail, long known as the "Aristocrat of the Table", is one of the most desirable game birds. It is the glamour bird for all upland game hunters, and it should be served in the manner suited to your particular taste.

Recipes for preparing quail run the gamut from the simple to the sublime. We have chosen several for your consideration, from the basic braised quail to one using exotic ingredients that will surely please the gourmet looking for something unusual to serve dinner guests.

BRAISED QUAIL

6-8 quail, seasoned
1 stick margarine or butter
2 slices onion
1 tbsp. flour
½ cup white wine
1 cup chicken broth

Season birds. Sauté onions in melted butter and place in bowl for use later. Brown birds, then remove from pan and add flour to butter. Stir in wine and chicken broth and return birds to pan, adding butter-onion sauce. Cook in 275° oven for approximately 1 hour and 15 minutes, turning birds twice. Mushrooms can be added if desired.

SOUTHERN FRIED QUAIL

6-8 quail

Season birds and roll in flour, coating generously. Place in heavy iron frying pan in fat, shortening or cooking oil ½ inch deep. Cook until brown, cover, turn heat low and cook 10-15 minutes. Remove lid and turn heat up to crisp birds for about 5 minutes, turning often. Make gravy with drippings if desired.

FLAMING QUAIL SUPREME

8-9 quail
1½ cups Madeira
½ cup raisins
4 cloves
1 cup cooked rice
¼ tsp. powdered ginger
1 tbsp. grated orange peel
1 tbsp. butter, melted
½ cup chopped pecans
½ cup melted butter
Juice of one orange
½ cup warmed Cognac
Preheat oven to 450°. Wash and dry the quail. Season inside and out with salt and pepper.

Combine Madeira, raisins and cloves in a saucepan. Bring to a boil, reduce heat and simmer five minutes. Strain mixture, discarding cloves.

Combine raisins, rice, ginger, orange peel, one tablespoon of melted butter and pecans in a mixing bowl. Mix well and stuff quail. Place quail on rack in a shallow roasting pan and brush with butter. Bake five minutes. Reduce oven temperature to 300° and bake 25 minutes longer, basting frequently with a mixture of the remaining butter, reserved Madeira, and orange juice.

Place quail in chafing dish and pour liquid in the roasting pan over the quail. Pour warmed Cognac over the quail and ignite. Serves 6-8.

QUAIL ST. TAMMANY

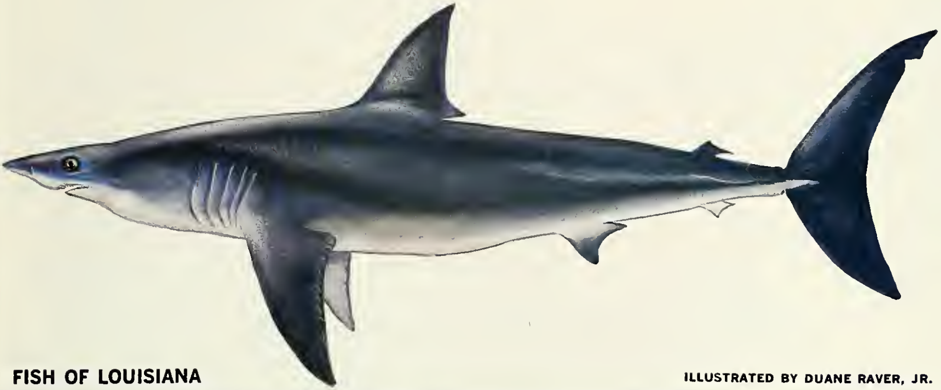
6-8 quail
Save hearts and gizzards or substitute ½ lb. ground beef
1 cup uncooked rice
1 stick butter
1 cup celery (leaves and tender part of stalk)
½ cup green onions
1 cup chicken stock
Dash of Worcestershire
12-15 drops Red Hot Sauce
Salt to taste

Sauté chopped hearts and gizzards, or ½ lb. ground beef, celery and onions in butter. Add stock, seasonings and rice. Cover and cook over low heat for 25 minutes.

While Jambalaya is cooking, dry pick birds. Season, roll in flour, and fry quail in deep vegetable oil in covered pot until brown. If not young birds, quail can be soaked overnight in light white wine.

For added taste, glaze with a mixture of ½ cup strawberry preserves and 1 teaspoon hot mustard. Brush on birds and put in hot oven for about 10 minutes.

Serve with jambalaya, garnish with parsley and crab apples.



FISH OF LOUISIANA

ILLUSTRATED BY DUANE RAVER, JR.

MAKO SHARK

While there are approximately 300 species of sharks recognized in the world, the International Game Fish Association only recognizes seven species in its categories of eligible game fish for world recognition. These include the Blue, Hammerhead, Porbeagle, Thresher, Tiger, White, and Mako sharks. Others, regardless of size and weight, are not considered worthy of the big game fisherman's attention.

This does not mean that other sharks have no value. A commercial shark fisheries existed in the United States until about 1950. The annual catch was in excess of 40 million pounds. The fishery was carried out chiefly to obtain the shark-liver oil which is rich in vitamin A. By-products of the oil industry included: hides, used for high-quality leather products; fins (of some species), sold as specialty food items; meat, salted or sold fresh as food for human consumption in some areas; carcasses, ground into meal; and teeth and vertebrae, cleaned and sold to curio shops.

With the discovery of cheaper sources of vitamin A, shortly before 1950, most of the commercial shark fisheries operations were suspended. In the past few years, shark fishing has gained the interest of some fish processors, with the meat intended for export markets.

Of the sharks regarded as game fish and eagerly sought by deep water sport fishermen the Mako shark (Isurus oxyrkinchus) is no slouch when it comes to tackle-testing, dogged fighting. In fact, big game fishermen will readily admit that the Mako is one of the great sharks of the sea, swift swimming, high leaping, a vicious fighter, almost tireless and indomitable, that will leap time and time again when hooked. Little wonder there is pride when a deep water angler can put one on the dock alongside the highly touted blue and white marlin, sailfish, and tuna.

This deep blue-gray shark with a white underside and a fearsome array of sharp teeth has a normal range from Cape Cod to the West Indies and the Gulf of Mexico. Adults will average from 10 to 12 feet and reach approximately 1,000 pounds. Records show that some have been taken relatively close to shore but most are battled and taken far out at sea or in the Gulf.

Closely related to the White shark, the Mako has a nearly symmetrical tail, streamlined shape, and pointed snout. The Mako's teeth are long and slender and protrude from the mouth. The second dorsal fin is only slightly ahead of the anal fin in the Mako. The dorsal and pectoral fins have somewhat rounded tips. Fresh specimens also show a sharp line of demarcation between the colored upper parts and the pure white below.

Mako sharks are apparently surface or near-surface dwelling fish. Tunas, mackerel, and herring-like fishes are staple foods. Oddly, they have a marked enmity for swordfish, which they somewhat resemble when eaten, and will attack swordfish whenever the latter are encountered. In addition to this similarity in taste, the Mako will feed on swordfish. As table food, the Mako shark rates as high as prized swordfish, but its real importance is the sport it provides for big game fishermen.

The all-tackle world record for Mako shark is a 1061-pounder, caught by James B. Penwarden in 1970 near Mayor Island, New Zealand. Others placing in official records of the International Game Fish Association were caught off New Zealand. Makos have been reported, also, from the Sea of Japan. This is a clear indication that they are found well away from the normal range mentioned, namely from Cap Cod to the West Indies, and in the Gulf of Mexico.

But data on the true range of Mako sharks and their breeding habits is scanty. It is known that Mako sharks produce eggs of huge proportions, larger than those of an ostrich.

In Louisiana waters, out of South Pass where members of the state's big game fishing clubs hold their tournaments, Makos are taken infrequently. The state record, as kept by the Louisiana Outdoor Writers Association, is a 400-pounder, taken by Jules E. Guglielmo, Sr., in July of 1972. Ranking second is a 358-8 pound shark taken by O. R. Payne in July of 1973. Leander H. Perez, Jr., ranks third with a 280-pounder taken in August of 1967.